

UNITED STATES OF AMERICA  
DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WASHINGTON, DC 20591

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In the matter of the petition of

BALLOON FEDERATION OF AMERICA \*

Regulatory Docket No. FAA-2003-16590

for an exemption from § 91.119(b) and (c)  
of Title 14, Code of Federal Regulations

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PARTIAL GRANT OF EXEMPTION

By undated letter, Mr. Charles Sundquist, President, Balloon Federation of America (BFA), P.O. Box 400, Indianola, Iowa 50125, petitioned the Federal Aviation Administration (FAA) on behalf of BFA for an exemption from § 91.119(b) and (c) of Title 14, Code of Federal Regulations (14 CFR). The proposed exemption, if granted, would permit BFA to conduct a safety study during which certain qualified and authorized BFA-member pilots would be allowed to operate balloons: (1) below an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the balloon, over congested areas; and (2) below an altitude of 500 feet above the surface in other than congested areas.

The petitioner requests relief from the following regulation:

Section 91.119(b) prescribes that except when necessary for takeoff or landing, no person may operate an aircraft over any congested area of a city, town, or settlement, or over any open air assembly of persons, below an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

Section 91.119(c) prescribes that except when necessary for takeoff or landing, no person may operate an aircraft over other than congested areas below an altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

The petitioner supports its request with the following information:

The petitioner states that BFA is a § 501(c)(3) of Title 26, Internal Revenue Code, educational organization with 4,000 members. BFA was founded in 1967 for the purpose of enhancing safety and promoting the sport of ballooning. The petitioner proposes to conduct a 3-year study to determine if there is an increase in safety with regard to persons and property on the surface when balloon pilots are permitted to fly at lower altitudes.

The petitioner believes that the study would provide informative and useful data in an effort to reassess § 91.119(b) and (c) as they apply to lighter-than-air flight. The petitioner states that BFA would appoint a suitable party to collect and report data during the course of the study that would include:

1. Voluntary feedback from participating pilots;
2. Accident information from participating and nonparticipating pilots; and
3. Comments from FAA Flight Standards District Offices (FSDO) through a liaison designated by the FAA.

The petitioner states that at the conclusion of the study, BFA would be available to participate with the FAA in the evaluation of the results, with the goal of providing the safest possible regulatory environment for balloons.

The petitioner states that the exemption would include:

1. U.S.-registered lighter-than-air free balloons with airborne heaters;
2. U.S.-registered lighter-than-air free balloons without airborne heaters; and
3. Foreign-registered lighter-than-air free balloons with or without airborne heaters, provided they carry an airworthiness certificate from the country of registration, and are operated by a BFA-member pilot.

The petitioner states that only BFA-member pilots would participate in the study. This would allow tracking of the pilots in the study and would ensure that participating pilots receive BFA's monthly educational and safety publications. The petitioner maintains that the pilots conducting operations under the exemption would hold a private or commercial pilot certificate with a lighter-than-air free balloon rating and be a current BFA member in good standing. The petitioner notes that BFA pilots receive the most complete listing of balloon safety seminar information in the country, and that BFA would keep its pilots informed of the ongoing results of the study through monthly updates in BFA publications and the BFA Web site.

The petitioner notes that each year more than 300 balloon events are conducted under an FAA waiver, which provides relief from the minimum altitude restrictions in § 91.119(b) and (c). A review of the accident investigation summaries posted by the National Transportation Safety Board since 1983 shows that the granting of this waiver has had no adverse effect on the accident statistics during balloon events. The petitioner believes that because these events provide the only legal opportunity for balloon pilots to operate outside these altitude restrictions, the data are highly instructive. The BFA study would provide similar data for balloon operations conducted under standard, daily, non-event operating conditions.

The petitioner states that a grant of exemption is in the public interest for safety reasons. Unlike any other aircraft, balloons are aerostatic, which means that a pilot's only method of horizontal directional control is changing the balloon's altitude. A recent study provides proof that the majority of changes in wind direction occur with decreasing altitude, and most of these directional variations are found at altitudes below 1,000 feet, and the majority are found below 500 feet. The petitioner states that allowing balloon pilots to make use of these changes as they plan their flights and landings will enable pilots to enhance the safety of balloon flight to persons and property on the surface and to passengers by making full use of all levels of altitude rather than only those above 500 feet or 1,000 feet as provided by the current regulation. The petitioner maintains that additional operable altitudes provide balloon pilots with more opportunities to change or adjust horizontal direction. Therefore, a pilot has a significantly increased opportunity to respond to changes in terrain and to maneuver away from persons or obstacles, thereby providing for a safer landing.

The petitioner believes that a grant of exemption would not only provide an equivalent level of safety to that provided by the current regulations, but that it would enhance the safety of balloon flight because of the greater level of maneuverability. The petitioner notes that in the event of a burner failure, the ability to fly at a lower altitude enables the pilot to perform an emergency landing with much more control as to the location of the landing, thereby enhancing the safety of the pilot and passengers. In a number of documented cases, lives could have been saved, injuries avoided, and property left undamaged had balloon pilots been permitted to fly at lower altitudes and maneuver more accurately to a safe and appropriate landing site.

A summary of the petition was published in the Federal Register on December 20, 2000 (65 FR 79913). No comments were received.

The FAA's analysis/summary is as follows:

The FAA finds that a grant of exemption, subject to specific conditions and limitations, is in the public interest and will provide a level of safety equivalent to that provided by the existing regulation.

The FAA determined that the proposed study would enable BFA to gather substantive data on the safety of hot air balloon operations conducted below the minimum altitudes prescribed by § 91.119(b) and (c). The FAA recognizes that it grants waivers for balloon events and competitions that provide relief from these altitude restrictions. Detailed operational data are not gathered at these events. The only way the data can be collected and reported scientifically and accurately in an environment that is representative of manned free balloon operations is in accordance with the specific data reporting requirements of the proposed exemption. However, the FAA finds that a 1-year study period would be more appropriate.

The primary objective of the minimum altitude requirements of § 91.119(b) and (c) is to protect the safety of persons and property on the surface. Above the minimum altitudes specified under § 91.119(b) and (c), most aircraft have sufficient altitude to navigate (steer the aircraft) clear of persons and property during descents following a power failure. Navigational or directional control of hot air balloons is achieved by changing altitude because wind direction varies with altitude. Pilots of hot air balloons can change altitude by controlling the envelope temperature. As the temperature of the air in the balloon envelope cools, the balloon descends. The pilot may vary the rate of descent by increasing or decreasing the venting of hot air out of the balloon.

At higher altitudes, usually above 1,700 feet above ground level (AGL) and under standard conditions, a balloon at maximum standard weight will lose all of its heat after descending 1,700 feet. (At lesser weights, this occurs in less than 1,700 feet.) At that point, the balloon will begin a terminal velocity descent.

The base of terminal velocity descent altitude for most balloons starts about 700 feet AGL. Terminal velocity eliminates directional control in the event of a power or burner failure at higher altitudes. Lower altitude flight in a balloon affords a greater degree of safety for the balloon pilot, the passengers, and those beneath the flight path of the balloon. If a balloonist has a power or burner failure, flying at lower than prescribed altitudes in § 91.119(b) and (c), the balloonist will be afforded a greater degree of control to the ground. The FAA determined that because of this, an equivalent level of safety under the grant of exemption will be maintained as that provided under § 91.119(b) and (c).

The FAA notes that the study is expected to begin in September 2003 and is programmed to allow BFA to brief its participating pilots and begin the flight testing at the start of the regular ballooning season.

In granting this exemption, the FAA is providing relief from § 91.119(b) and (c) to allow BFA to conduct a test program to:

- Determine whether a change to § 91.119 would improve the safety of balloon operations, and
- Collect critical data from the test program necessary to make that determination.

Additionally, under this grant of exemption, the FAA requires participating pilots to comply with (1) all existing operating regulations, and (2) all conditions and limitations presented under this grant of exemption.

Those pilots authorized to participate in this program, as described in paragraph 6 below, must submit data from the test program to the FAA.

Please note the FAA has assigned a new docket number to this project (Docket No. FAA-2003-16590; previously Docket No. 30166). In an effort to allow the public to participate in tracking the FAA's rulemaking activities, we have transitioned to the Department of Transportation's Internet-accessible Docket Management System (DMS), located at <http://dms.dot.gov>. This new system enables interested persons to submit, view, and download requests to the DMS in accordance with 14 CFR § 11.63. Future requests should be submitted through this system.

In consideration of the foregoing, I find that a partial grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. §§ 40113 and 44701, delegated to me by the Administrator, Balloon Federation of America is granted an exemption from 14 CFR § 91.119(b) and (c) to allow BFA to conduct a 1 year, non-renewable safety study during which certain qualified and authorized BFA-member pilots will be allowed to operate balloons: (1) below an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the balloon, over congested areas; and (2) below an altitude of 500 feet above the surface in other than congested areas, subject to the following conditions and limitations:

1. BFA pilots conducting test flights under this exemption must—
  - a. Obtain a copy of the flight test profile form from the BFA office.
  - b. Receive an indepth weather briefing before each test flight and record the information on the flight test profile form.

- c. Immediately file the completed flight test profile forms with the BFA office after each test flight.
- 2. While conducting test flight operations under this exemption, BFA pilots—
  - a. May not carry passengers for compensation or hire.
  - b. May carry a banner for compensation or hire on the balloon for advertising purposes.
  - c. May not carry persons other than flightcrew and/or an FAA aviation safety inspector as provided in paragraph 2h.
  - d. Must not conduct flight instruction or dual instruction of any kind.
  - e. Must, except for takeoff and landing, comply with a 500-foot AGL altitude restriction over congested areas except as provided in paragraph 2f.
  - f. May, over congested areas, demonstrate approaches to suitable landing areas with a break-off altitude of 200 feet AGL with no intent to land.
  - g. Must, except for takeoff and landing, comply with a 200-foot AGL altitude restriction away from any person or manmade object over noncongested areas.
  - h. Must allow an FAA aviation safety inspector from the local FSDO, region, or headquarters office to observe the test flight.
- 3. All pilots authorized by BFA to conduct test flight operations under this exemption must—
  - a. Hold a commercial pilot certificate with a lighter-than-air category and balloon class rating or a private pilot certificate with a lighter-than-air category and balloon class rating and sufficient flight-hours to hold a commercial pilot certificate with a lighter-than-air category and a balloon class rating.
  - b. Have current flight experience in a balloon, including flying within 30 days of flight testing.
- 4. All test flights conducted under this exemption must—
  - a. Have a flightcrew that consists of a pilot, at least one observer (but may have a maximum of two observers), and if requested by the FAA, one FAA aviation safety inspector.

- b. Be conducted in day visual meteorological conditions with at least a 2,000-foot ceiling and 3 statute miles visibility.
  - c. Not be conducted during competitions, airshows, or any other activity that is conducted under a waiver.
- 5. All balloons used for test flight operations under this exemption must—
  - a. Be U.S.-registered and hold a standard airworthiness certificate for a manned free balloon.
  - b. Meet all 14 CFR part 43 and part 91 maintenance currency requirements.
  - c. Be equipped with a Global Positioning System (GPS), which must be used for gathering data.
  - d. Not have any unapproved altered equipment onboard the balloon. However, altered equipment included in the balloon's airworthiness certificate is allowed.
- 6. BFA must—
  - a. Submit to Mr. Al Peyus, AFS-820, the expected goal of the test flight study and how the data gathered will be used for all BFA pilots.
  - b. Before conducting test flight operations under this exemption, submit to Mr. Al Peyus, AFS-820, a list of no more than 100 pilots who will be conducting test flight operations under this exemption. The list must be separated by FAA region and also include the registration numbers of the balloons that will be flown under this exemption and the pilots' total flight time, certificates held, and certificate numbers.
  - c. Update the list of pilots who will be conducting test flight operations under this exemption on a monthly basis.
  - d. Advise the nearest FSDO that it will be conducting a test flight 5 days before each test flight to allow the FSDO at its discretion to schedule surveillance of the flight.
  - e. Check the completed flight test profile forms to ensure the data collected is properly entered and the forms are complete.
  - f. Collect any other data during the test flights that it deems necessary and important to the final outcome of the study.

- g. Collect data on incidents or problems encountered by the participating pilots.
- 7. BFA must send the completed flight test profile forms, the data collected on incidents or problems encountered during the test flights, and any other data collected during the test flights that it deems necessary and important to the final outcome of the study to—

Federal Aviation Administration  
ATTN: Mr. Al Peyus, AFS-820  
800 Independence Avenue, SW.  
Washington, DC 20591  
(202) 267-3840-office  
(703) 447-3128-cellular  
(202) 267-5094-fax

This exemption begins on March 1, 2004, and terminates at midnight on February 28, 2005, unless sooner superseded or rescinded.

Issued in Washington, DC, on December 23, 2003.

/s/

John M. Allen  
Acting Director, Flight Standards Service